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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,768	12/28/2001	Gee Sung Chae	2658-0281P	4297

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EXAMINER	
RICHARDS, N DREW	

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/028,768	CHAE, GEE SUNG	
	Examiner	Art Unit	
	N. Drew Richards	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 21-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,7,8,21-23,25 and 26* is/are rejected.

7)☒ Claim(s) *2,6,24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/12/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Product-by-Process Limitations

1. While not objectionable, the Office reminds Applicant that "product by process" limitations in claims drawn to structure are directed to the product, per se, no matter how actually made. *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also, *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wethheim,* 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al.,* 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or otherwise. Note that applicant has the burden of proof in such cases, as the above case law makes clear. Thus, no patentable weight will be given to those process steps which do not add structural limitations to the final product.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3-5, 7, 8, 21-23, 25 and 26 rejected under 35 U.S.C. 102(e) as being anticipated by Song et al. (U.S. Patent No. 6,531,392 B2).

Song et al. disclose a liquid crystal display device in figure 4, for example, comprising:

- a substrate 10;
- a gate electrode 26 over the substrate;
- a first semiconductor layer 42 over the substrate; and
- a source electrode 56/76 and a drain electrode 55/75 over the first semiconductor layer 42, the source and drain electrodes having a first metal layer 55/56 and a second metal layer 75/76 formed in a same pattern and defining and forming a separation between the source and drain electrode;
- wherein the first metal layer and the second metal layer have etched sidewalls along the separation that are aligned.

The limitation of the first metal layer being patterned by dry etching process using the second metal layer as a mask is a product-by-process limitation that does not structurally distinguish over the prior art. The first and second metal layers are disclosed as being in the same pattern with substantially aligned side-walls and thus read on the structure as claimed regardless of the method by which it was fabricated.

With regard to claim 3, the first metal layer includes molybdenum (column 8 lines 64-66, when the first metal layer is the dual layered structure it includes molybdenum silicide).

With regard to claim 4, the second metal layer includes aluminum (column 9 lines 16-20).

With regard to claim 5, Song et al. disclose a liquid crystal display device in figure 4, for example, comprising:

- a substrate 10;
- a gate electrode 26 over the substrate;
- a first semiconductor layer 42 over the substrate;
- a source electrode 56/76 and a drain electrode 55/75 over the first semiconductor layer 42, the source and drain electrodes including a first metal layer 55/56 and a second metal layer 75/76 formed patterned to form a separation between the source and drain electrodes;
- a second semiconductor layer beneath the first metal layer 55/56 and having a same pattern as the first metal layer (column 8 lines 64-66, when the first metal layer is the dual layered structure it includes a doped amorphous silicon layer); and
- wherein the first metal layer and the second metal layer have etched sidewalls along the separation that are aligned.

The limitation of the first metal layer being patterned by dry etching process using the second metal layer as a mask is a product-by-process limitation that does not structurally distinguish over the prior art. The first and second metal layers are disclosed as being in the same pattern with substantially aligned side-walls and thus read on the structure as claimed regardless of the method by which it was fabricated.

With regard to claim 7, the first metal layer includes molybdenum (column 8 lines 64-66, when the first metal layer is the dual layered structure it includes molybdenum silicide).

With regard to claim 8, the second metal layer includes aluminum (column 9 lines 16-20).

With regard to claims 21 and 22, Song et al. further disclose an ohmic contact layer 65/66 over the first semiconductor layer, wherein inner edges of the ohmic contact layer 65/66 facing the separation space are aligned with inner edges of the first metal layer (as seen in figure 4 the inner edges of layers 55/65/75/56/66/76 are aligned).

With regard to claim 23, Song et al. disclose a liquid crystal display device in figure 4, for example, comprising:

- a substrate 10;
- a gate electrode 26 over the substrate;

- a first semiconductor layer 42 over the substrate;
- an ohmic contact layer 65/66 over the first semiconductor layer;
- a source electrode 56/76 and a drain electrode 55/75 over the first semiconductor layer 42, the source and drain electrodes including a first metal layer 55/56 and a second metal layer 75/76 formed in a same pattern and defining a separation between the source and drain electrodes;
- wherein the first metal layer and the second metal layer have etched sidewalls along the separation that are aligned; and
- wherein inner edges of the ohmic contact layer 65/66 facing the separation space are aligned with inner edges of the first metal layer (as seen in figure 4 the inner edges of layers 55/65/75/56/66/76 are aligned).

The limitation of the first metal layer being patterned by dry etching process using the second metal layer as a mask is a product-by-process limitation that does not structurally distinguish over the prior art. The first and second metal layers are disclosed as being in the same pattern with substantially aligned side-walls and thus read on the structure as claimed regardless of the method by which it was fabricated.

With regard to claim 25, the first metal layer includes molybdenum (column 8 lines 64-66, when the first metal layer is the dual layered structure it includes molybdenum silicide).

With regard to claim 26, the second metal layer includes aluminum (column 9 lines 16-20).

Allowable Subject Matter

4. Claims 2, 6 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: Prior art of record fails to teach, disclose or suggest, either alone or in combination, the liquid crystal display as claimed including a protective layer over the source and drain electrodes and a pixel electrode provided on the protective layer. Prior art such as Song et al. teach the pixel electrode provided beneath and extending outward from the protective layer but no motivation could be found in the prior art to provide the pixel electrode on the protective layer.

Response to Arguments

6. Applicant's arguments with respect to claims 1-8 and 21-26 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Drew Richards whose telephone number is (571) 272-1736. The examiner can normally be reached on Monday-Friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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